

**For the paragraph at page 12, lines 14-20, please revise as follows:**

One of the requirements of compressive testing was that the surfaces of the gels be flat and parallel. In some cases, the calcium source reacted with the polymer too quickly for the surfaces of the gels to level, resulting in lumpy gels (Table 1). Mechanical properties of gels prepared with different alginates and calcium ion sources of the same polymer concentration and the same relative calcium content were compared (Table 1). *LH* alginate gels prepared with  $\text{CaCO}_3$ -GDL was were the strongest of the tested gels.

**For the paragraph on page 14, lines 2-12, please revise as follows:**

The homogeneity of cylindrical alginate gels was characterized with the dry/wet ratio in both axial and radial directions. *MP* alginate gels with varying polymer concentrations of (1.00, 1.25, 1.50, 1.75, 2.00%) were prepared with 1X  $\text{CaCO}_3$ . Horizontally sliced sections and vertically cored hollow cylinders exhibited comparable homogeneity profiles for all five alginate concentrations (~~Figure 1~~) (Figures 1a and 1b). This indicated that the polymer concentration did not have significant effects on the gel homogeneity in the concentration range studied. In the axial direction, the dry/wet weight ratio was almost the same everywhere except for the bottom slice. The slightly higher ratio of the bottom slice was likely due to either adherence of the  $\text{CaCO}_3$  powder to the bottom during mixing or some sedimentation during the gelation. In the radial direction, the dry/wet weight ratio decreased slightly from circumference to the center.

**For the paragraph on page 14, lines 14-22, please revise as follows:**

Syneresis was characterized with the volume ratio of a gel to the suspension before gelation. The gels studied were *MP* alginate gels prepared with a polymer concentration of 1.75% and varying relative calcium ion contents (0.5, 1.0, 1.5 and 2.0 X  $\text{CaCO}_3$ ), and *LH* alginate gels prepared with a polymer concentration of 1.50% with varying relative calcium ion contents (1.0, 1.5, 2.0, 3.0, and 4.0X  $\text{CaCO}_3$ ). The general trend was that the shrinkage increased with calcium concentration (~~Figure 2~~) (Figures 2a and 2b). It was assumed that an increased calcium content enhanced the inter-molecular and intra-molecular interactions of alginate gel, shortened the average distance between ionic crosslinks, and resulted in a higher shrinkage.

**For the paragraph on page 14, line 24 through page 15, line 2, please revise as follows:**

One of the requirements for compressive testing was that the surfaces of the gels be flat and parallel.  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  reacted with the polymer too quickly for the surfaces of the gels to level, resulting in a-lumpy gels. The  $\text{CaCO}_3$ -GDL system, on the other hand, allowed enough time for proper mixing of the suspension and leveling of the surfaces. When  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$  was used, gels were prepared slightly thicker and cut to 8 mm thick to obtain the flat and parallel surfaces for mechanical testing.

**For the paragraph on page 15, lines 8-25, please revise as follows:**

Mechanical properties of the alginate gels changed with structural variables. The compressive modulus and the compressive strength increased with alginate concentration in general (~~Figures 3 and 4~~) (Figures 3a, 3b, 4a and 4b). However, the compressive strength of a *MP* alginate gel of 2.0% concentration was slightly lower than that of a gel of 1.75% concentration (Figure 4a). The *MP* alginate solution with concentrations of 2.0% and higher were extremely viscous and difficult to work with. The fall in strength at this high alginate concentration was attributed to the poor mixing and the heterogeneous crosslinking network. The compressive modulus and the compressive strength increased with the relative calcium content (~~Figure 5 and 6~~) (Figures 5a, 5b, 6a, and 6b) presumably due to increased crosslinking density. However, for the gels prepared from 1.5% *LH* alginate, the compressive strength of the gel with a relative calcium content of 5X was lower than that of the gel with a relative calcium content of 4X (Figure 6b). Precipitate was undetectable in the gels with 3X and lower  $\text{CaCO}_3$  contents. At 4X and higher calcium content, precipitates were visible likely due to oversaturation. The decrease in compressive strength at 5X was attributed to the precipitation which might result in structural heterogeneity and stress concentrations, leading to lower average strength. The large standard deviation at 5X was another indication of the structural heterogeneity.